

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
Chang et al.

Serial No.: 10/689,775

Filed: October 20, 2003

For: **OLEFIN-HYDROPHILIC BLOCK
COPOLYMERS OF CONTROLLED
SIZES AND METHODS OF MAKING
AND USING THE SAME**

Group Art Unit: 1713

Examiner: W. Cheung

Atty. Dkt. No.: **SYTC-028/US (formerly
189861/US/2)**

Confirmation No.: 4543

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April 20, 2009
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BRIEF FOR APPLICANTS

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BRIEF FOR APPLICANTS

This is an appeal from the final rejection of the above-identified application made in the Final Office action mailed June 30, 2006. A Notice of Appeal was mailed on August 16, 2005.

I. REAL PARTY IN INTEREST

The real party in interest in connection with the present appeal is Symyx Technologies, Inc., owner of a 100 percent interest in the pending application.

II. RELATED APPEALS AND INTERFERENCES

The Applicants are unaware of any pending appeals or interferences which may directly affect or be directly affected by, or have a bearing on, the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1-9, 12-19, 22 and 23 are pending in this application. In the Final Office action of June 30, 2006, claims 1-9, 12-19, 22 and 23 stand finally rejected. The rejection of claims 1-9, 12-19, 22 and 23 is appealed.

IV. STATUS OF AMENDMENTS

No amendments have been filed subsequent to the Final Office action of June 30, 2006.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

Independent claim 1 recites a method of preparing a block copolymer having at least one hydrophilic block and one olefinic block.¹ A liquid hydrophilic monomer is first polymerized under polymerization conditions in the presence of a dithio-containing control agent.² The resulting hydrophilic block is then subsequently reacted with an olefin monomer capable of free radical polymerization under polymerization conditions.³ The resulting block co-polymer then modifies the surface tension of an olefinic substrate by an amount of at least 10 mN/m.⁴

Claim 6 which depends from claim 1, further requires at least partially hydrogenating the olefinic block.⁵

Independent claim 12 recites a method of preparing a block copolymer having at least one hydrophilic block and one olefinic block. An olefinic monomer is polymerized under free radical polymerization conditions in the presence of a dithio-containing control agent to create at least one olefinic block. The olefinic block is subsequently reacted with a hydrophilic monomer capable of free radical polymerization under polymerization conditions to form at least one hydrophilic block.⁶ The surface tension of an olefinic substrate is then modified with the resulting block copolymer by an amount of at least 10 mN/m.⁷

Claim 16, which depends from claim 12, requires at least partially hydrogenating the olefinic block.⁸

Independent claim 22 recites method of preparing a block copolymer having at least one hydrophilic block. The block copolymer has the structure A-R, wherein R represents a random

¹ See Applicant's Specification, page 3, lines 28-30.

² See *Id.* page 3, lines 32-34.

³ See *Id.*, page 4, lines 3-6.

⁴ See *Id.*, page 4, lines 13-16.

⁵ See *Id.*, page 7, lines 30-31.

⁶ See *Id.*, page 11, lines 2-3.

⁷ See *Id.*, page 4, lines 13-16.

⁸ See *Id.*, page 7, lines 30-31.

block comprising at least two monomers.⁹ A hydrophilic monomer is polymerized under free radical polymerization conditions in the presence of a dithio-containing control agent to create at least one hydrophilic block. The hydrophilic block is subsequently reacted with at least one olefinic monomer and one monomer that is hydrophilic with respect to the olefinic monomer capable of free radical polymerization under polymerization conditions to form at least one random block.¹⁰ The random block is then at least partially hydrogenated.¹¹

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

This is an appeal from the final rejection of:

- 1) Claims 1-9, 12-19 and 22 under 35 U.S.C. § 102(b) as allegedly being anticipated by the '850 patent¹², and
- 2) Claims 1-9, 12-19, 22 and 23 under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over the '850 patent¹³, the '968 patent¹⁴, and the '969 patent¹⁵. The claims on appeal are set forth in full in the Appendix to this Brief.

VII. ARGUMENT

A. REJECTION OF CLAIMS 1-9, 12-19 AND 22 UNDER 35 U.S.C. § 102(b)

Claims 1-9, 12-19 and 22 stand rejected under 35 U.S.C. § 102(b) as being anticipated by the '850 patent. The Applicants respectfully disagree.

The '850 patent is directed to dithio compounds useful in assisting in polymerization of monomers in a free radical polymerization, polymers made with those compounds and methods of polymerization. The '850 patent lists a large number of monomers that can be polymerized with the dithio compounds.¹⁶ The '850 patent also generally teaches that the polymers can be

⁹ See *Id.*, page 6, lines 12-15.

¹⁰ See *Id.*, page 35, paragraph [0082].

¹¹ See *Id.*, page 38, paragraph [0087].

¹² U.S. Patent 6,395,850 to Charmot et. al.

¹³ *Id.*

¹⁴ U.S. Patent 6,767,968 to Charmot et.al.

¹⁵ U.S. Patent 6,569,969 to Charmot et. al.

¹⁶ See U.S. Patent 6,395,850 at column 10, lines 1-57.

copolymers and can be random or block copolymers.¹⁷ The examples in the '850 patent only involve homopolymerizations.¹⁸

Claim 1

In the present invention, independent claim 1 requires the method step of modifying the surface tension of an olefinic substrate by an amount of at least 10 mN/m with the block copolymer made in the previous steps. There is absolutely no mention in the '850 patent of this step.

The Final Office action states that “the amended features do not relate to the ‘method of preparing a block copolymer’ as claimed. Therefore the amended features are still considered as properties of the block copolymers prepared by the method invention as claimed.”¹⁹ Applicants disagree with this analysis.

To the extent that the Final Office action is limiting the scope of the claims, Applicants respectfully submit that “[e]ach element contained in a patent claim is deemed material to defining the scope of the patented invention” Warner –Jenkinson Co., Inc. v. Hilton Davis Chemical Co., 41 USPQ2d 1865, 1871 (1997). It is improper to eliminate or ignore a claim limitation in order to extend a patent to subject matter disclosed but not claimed. See Unique concepts, Inc. v. Brown, 19USPQ2d 1500 (Fed. Cir. 1991). Here, the Final Office action has improperly limited the scope of the claim in view of the preamble, thus extending the claims to subject matter disclosed but not claimed. The feature “modifying the surface tension of an olefinic substrate by an amount of at least 10 mN/m with the block copolymer” is a positive method step and should be given weight as a limitation of the claim. “If the body of the claim sets out the complete invention, and the preamble is not necessary to give ‘life, meaning and vitality’ to the claim, ‘then the preamble is of no significance to claim construction because it cannot be said to constitute or explain a claim limitation.’” Bristol-Meyers Squibb Co. v. Ben Venue Laboratories, Inc., 58 USPQ2d 1508, 1511 (Fed. Cir. 2001)(quoting Pitney Bowes, Inc. v. Hewlett-Packard Co., 51 USPQ2d 1161, 1166 (Fed. Cir. 1999)). Thus, the claim should be construed as drafted and not as interpreted by the Final Office action.

¹⁷ See Id. at column 12, lines 4-5.

¹⁸ See Id. at column 13, lines 55-60.

Applicants assert however, that neither the positively recited step of modifying a substrate as claimed, nor the property of a block copolymer as claimed (as interpreted in the final Office action) are disclosed or inherent in the '850 patent.

While the property of the polymer (the ability to modify an olefinic substrate by an amount of at least 10 mN/m) is not inherent in the polymers disclosed in the '850 patent, the positively recited step of modifying an olefin substrate is certainly not inherent in the reference cited, regardless of the properties of any polymer disclosed therein. Since this method step is not disclosed in the '850 patent, independent claim 1 as well as the claims dependent thereon are not anticipated.

In such instances, a reference can only be found to be anticipatory if the undisclosed element is inherently present in the cited reference. See Advanced Display Systems, 54 USPQ2d 1673 at 1679 (Fed. Cir. 2000), cert. denied, 121 S.Ct. 1226 (2000). In relying upon the theory of inherency, the Office must establish a *prima facie* case, *i.e.* "the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original). The Office has not done this.

First, Applicants respectfully assert that the Final Office action has failed to examine the claim as presented originally in the RCE and that it is abundantly clear that the step of modifying an olefinic substrate by an amount of at least 10 mN/m is not disclosed in and does not necessarily flow from any disclosure in the '850 patent.

To the extent that the Final Office action is interpreting the method step to be the property of the resulting polymer as opposed to a positively recited step, the Final Office action merely points to the disclosure of the '850 patent as a whole as opposed to any specific embodiment, stating "the amended features are still considered as properties of the block copolymers prepared by the method invention as claimed."²⁰ The Final Office action cannot point to any specific copolymer within the '850 patent because the examples only include homopolymers. Thus, the

¹⁹ See Final Office action, page 5, last paragraph.

²⁰ See Final Office action, page 5, last paragraph.

Final Office action is apparently asserting that any copolymer made as disclosed in the '850 patent will have the property of the copolymer as claimed.

The ability for a copolymer to modify an olefin substrate as claimed would not necessarily result through all polymerizations as taught in the '850 patent. The resulting properties of block copolymers are dependent on many factors, such as monomer type, initiator type, control agent type, component ratios, reaction temperatures, reaction pressures, reaction times, etc. Making copolymers as broadly taught in the '850 patent may or may not result in copolymers that would modify the surface tension of an olefin substrate as claimed. A skilled artisan would not, therefore, have considered the '850 patent to teach a method that is specifically claimed. Since copolymers can be made having very different monomers, molecular weights, ratios of components, etc., it is readily apparent that the claimed limitation of modifying an olefinic substrate by an amount of at least 10 mN/m (or having the ability to do so, as the Final Office action interprets the limitation) does not necessarily flow from the teaching of making copolymers with a laundry list of monomers and control agents under a wide variety of reaction conditions.

For at least this reason, the Applicants requests that the rejection be withdrawn.

Claim 6

Claim 6 which depends from claim 1, and incorporates all of the limitations therein, is also not anticipated. Claim 6 is separately and independently patentable in view of its respective requirements further requiring at least partially hydrogenating the olefinic block. The '850 patent neither explicitly nor inherently discloses this additional step in addition to the requirements of claim 1.

The step of hydrogenating the block is a positive step that the Final Office action seems to interpret as an inherent result or property to the copolymers of the '850 patent. The final Office action has not pointed to any disclosure of the '850 patent, but has merely taken the position (with respect to the hydrogenation step in independent claim 22) that "the limitation is a

result or property that is inherent in the polymerization of certain monomers.”²¹ This interpretation is baffling and is without merit. Those of skill in the art recognize that a hydrogenation reaction is one in which hydrogen is added to a moiety, typically across a double bond, such as in the conversion of alkenes to alkanes, whereas polymerization involves the addition or growth of a chain of monomer units through the breaking of bonds. Hydrogenation does not ever necessarily flow from polymerization. Thus, the ‘850 patent does not disclose the step of at least partially hydrogenating the olefin block.

For at least this reason, Applicants respectfully request the rejection be withdrawn.

Claim 12

Claim 12 is not anticipated by the ‘850 patent for the same reasons claim 1 is not anticipated. Claim 12 is separately and independently patentable in view of its respective requirements concerning the order of polymerization, specifically polymerizing an olefinic monomer under free radical polymerization conditions in the presence of a dithio-containing control agent to create said at least one olefinic block and subsequently reacting said at least one olefinic block with a hydrophilic monomer capable of free radical polymerization under polymerization conditions to form said at least one hydrophilic block and modifying the surface tension of an olefinic substrate by an amount of at least 10 mN/m with the block copolymer.

As discussed above for claim 1, the Final Office action has failed to interpret the claim limitation as presented, and has “read out” a positively recited method step. The Applicants respectfully submit that this is improper for the same reasons discussed above.

As also discussed above for claim, 1, neither the step of modifying the surface tension of an olefinic substrate by an amount of at least 10 mN/m with the block copolymer nor the property of the resulting block copolymer to modify the surface tension of an olefinic substrate by an amount of at least 10 mN/m is inherent in the ‘850 patent.

First, Applicants respectfully assert that the Final Office action has failed to examine the claim as presented originally in the RCE and that it is abundantly clear that the step of modifying

²¹ See Final Office action, page 6, second paragraph.

an olefinic substrate by an amount of at least 10 mN/m is not disclosed in and does not necessarily flow from any disclosure in the '850 patent.

To the extent that the Final Office action is interpreting the method step to be the property of the resulting polymer as opposed to a positively recited step, the Final Office action cannot point to any specific copolymer within the '850 patent that anticipates claim 12, because the examples only include homopolymers. Thus, the Final Office action is apparently asserting that any copolymer made as disclosed in the '850 patent will have the property of the copolymer as claimed. As discussed above for claim 1, due to the large variety of components, reactants and conditions disclosed generally in the '850 patent, a skilled artisan would not, therefore, have considered the '850 patent to teach a method that is specifically directed to making polymers as claimed. Since copolymers can be made having very different monomers, molecular weights, ratios of components, etc., it is readily apparent that the claimed limitation of modifying an olefinic substrate by an amount of at least 10 mN/m does not necessarily flow from the teaching of making copolymers with a laundry list of monomers under a wide variety of reaction conditions.

For at least this reason, the Applicants requests that the rejection be withdrawn.

Claim 16

Claim 16 which depends from claim 12, and incorporates all of the limitations therein, is also not anticipated. Claim 16 is separately and independently patentable in view of its respective requirements further requiring at least partially hydrogenating the olefinic block. The '850 patent neither explicitly nor inherently discloses this additional step in addition to the requirements of claim 12.

As discussed above with regards to claim 6, there is no discussion in the '850 patent of at least partially hydrogenating the olefin block. The Final Office action has taken the position that hydrogenation is an inherent result of polymerization. The Applicants disagree with this position, as polymerization results in the addition of monomer units and hydrogenation is the addition of hydrogen. One of skill in the art will readily recognize that these are different reactions and are exclusive of each other. Hydrogenation does not necessarily flow from

polymerization.

For at least this reason, the Applicants respectfully request the rejection be withdrawn.

Claim 22

Independent claim 22 requires at least partially hydrogenating the random block. As discussed above in the context of dependent claims 6 and 16, hydrogenation of any block is not taught anywhere in the '850 patent. This feature, once again, has not been addressed in the Final Office action. The Examiner appears to be interpreting this feature as a property of a resulting polymer rather than a positively recited method step to be carried out in accordance with the invention.

In such instances, a reference can only be found to be anticipatory if the undisclosed element is inherently present in the cited reference. See Advanced Display Systems, at 1679. In relying upon the theory of inherency, the Office must establish a *prima facie* case, i.e. "the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, at 1464 (emphasis in original). The Office has not done this.

The step of hydrogenating the block is a positive step that the Final Office action interprets as an inherent result or property to the copolymers of the '850 patent. The final Office action has not pointed to any disclosure of the '850 patent, but has merely taken the position that the limitation is a result or property that is inherent in the polymerization of certain monomers. This interpretation is baffling and is without merit. Those of skill in the art recognize that a hydrogenation reaction is one in which hydrogen is added to a moiety, typically across a double bond, such as in the conversion of alkenes to alkanes, whereas polymerization involves the addition or growth of a chain of monomer units through the breaking of bonds. Hydrogenation does not ever necessarily flow from polymerization. Thus, the '850 patent does not disclose the step of at least partially hydrogenating the olefin block.

For at least these reasons, the Applicants requests that the rejections be withdrawn.

B. REJECTION OF CLAIMS 1-9, 12-19, 22 AND 23 UNDER OBVIOUSNESS-TYPE DOUBLE PATENTING

Claims 1-9, 12-19, 22 and 23 stand rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 1-20 of the '850 patent, as allegedly being unpatentable over claims 8-16 and 20-26 of the '968 patent, and as allegedly being unpatentable over claims 1-13 of the '969 patent.

The Applicants respectfully traverse this rejection.

As an initial point of consideration, as discussed above, the Final Office action is interpreting the steps of modifying the surface tension of an olefinic substrate by an amount of at least 10 mN/m with the block copolymer and the step of at least partially hydrogenating the olefin or random block as a properties of the resulting polymer and has provided no basis for making such an interpretation. As discussed above, the positively recited method steps must be read in as limitations of the claim. The Final Office action has provided an improper claim construction to extend the subject matter of the claims. These positive method steps are certainly not disclosed in any of the references cited, regardless of the properties of any polymer disclosed therein.

The claims at issue are patentably distinct from the claims in the '850 patent, the '968 patent and the '969 patent. The present claims require making specific types of block copolymers using dithio control agents. Independent claim 1 requires polymerizing a liquid hydrophilic monomer in the presence of a dithio-containing control agent to create a hydrophilic block, subsequently reacting the hydrophilic block with an olefin monomer to form an olefinic block and modifying the surface tension of an olefinic substrate by an amount of at least 10 mN/m. Dependent claim 6 requires at least partially hydrogenating the olefin block of claim 1. Independent claim 12 requires polymerizing an olefinic monomer in the presence of a dithio-containing control agent to create an olefinic block, subsequently reacting the olefinic block with a hydrophilic monomer capable to form a hydrophilic block and modifying the surface tension of an olefinic substrate by an amount of at least 10 mN/m. Dependent claim 16 requires at least partially hydrogenating the olefin block of claim 12. Independent claim 22 requires polymerizing

a hydrophilic monomer under free radical polymerization conditions in the presence of a dithio-containing control agent to create at least one hydrophilic block and subsequently reacting the hydrophilic block with an olefinic monomer and one monomer that is hydrophilic with respect to the olefinic monomer to form the random block, and at least partially hydrogenating the random block.

The '850 patent

The claims of the '850 patent recite polymerizing one or more monomers using a dithio control agent. The claims of the '850 patent also teach that the polymer can be a block copolymer. The claims of the '850 patent do not even hint at the specific steps using specific monomer types in the order as recited in the claims of the present invention, modifying the surface tension of an olefinic substrate with the resulting copolymer as claimed in independent claims 1 and 12, or the step of hydrogenating the olefin block as claimed in dependent claims 6 and 16 and hydrogenating the random block in independent claim 22.

To the extent that the Office action is relying on the specification of the '850 patent to fill in any missing gaps, the Applicants submits that this is improper. "[C]omparison can be made only with what invention is *claimed* in the earlier patent. . . . Our precedent makes it clear that the *disclosure* of a patent cited in support of a double patenting rejection cannot be used as though it were prior art" General Foods Corp. v. Studiengesellschaft Kohle mbH, 23 USPQ2d 1839 1845-1846 (Fed. Cir. 1992). The present claims are not directed generally to making polymers with dithio control agents, but recite specific methods to do so, that are not obvious. The Final Office action has provided no reasonable basis for supporting a case that the present claims are obvious in view of the claims of the '850 patent.

The '968 patent

The claims of the '968 patent are directed to block copolymers having hydrophilic and hydrophobic components. The claims of the '968 patent do not even hint at the use of any dithio control agent being used to make the copolymers claimed therein as is required in all of the claims of the present invention, modifying the surface tension of an olefinic substrate with the

copolymers as claimed in independent claims 1 and 12, or the step of hydrogenating the olefin block as claimed in dependent claims 6 and 16 and hydrogenating the random block in independent claim 22.

To the extent that the Final Office action is relying on the specification of the '968 patent to fill in any missing gaps, the Applicants submit that this is improper as discussed above. The present claims are directed to specific methods for making specific types of block copolymers with dithio control agents. The Final Office action has provided no reasonable basis for supporting a case that the present claims are obvious in view of the claims of the '968 patent.

The '969 patent

The claims of the '969 patent recite polymerizing one or more monomers using a multifunctional control agent. The claims of the '969 patent also teach that the polymer can be a block copolymer. The claims of the '969 patent do not even hint at the specific steps using specific monomer types in the order as recited in the claims of the present invention, modifying the surface tension of an olefinic substrate with the resulting copolymer as claimed in independent claims 1 and 12, or the step of hydrogenating the olefin block as claimed in dependent claims 6 and 16 and hydrogenating the random block in independent claim 22.

To the extent that the Final Office action is relying on the specification of the '969 patent to fill in any missing gaps, the Applicants submit that this is improper as discussed above. The present claims are not directed generally to making polymers with dithio control agents, but recite specific methods to do so, that are not obvious. The Final Office action has provided no reasonable basis for supporting a case that the present claims are obvious over the claims of the '969 patent.

For at least these reasons, the Applicants requests that the double patenting rejections be withdrawn.

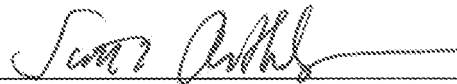
VIII. CONCLUSION

For the foregoing reasons, the Applicants respectfully submits that claims 1-9, 12-19, 22 and 23 are patentable over the art of record and requests that the rejection of these claims as being unpatentable be reversed.

The Commissioner is hereby authorized to charge the fees required in connection with this Appeal Brief to Deposit Account No. 50-1212, in accordance with the Transmittal submitted herewith. The Commissioner is also authorized to debit any other fees required in connection with this communication, or to credit any overpayment of fees in connection with this communication to Deposit Account No. 50-1212.

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Respectfully submitted,



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CLAIMS APPENDIX

1. (Previously presented) A method of preparing a block copolymer having at least one hydrophilic block and one olefinic block comprising polymerizing a liquid hydrophilic monomer under polymerization conditions in the presence of a dithio-containing control agent to create said at least one hydrophilic block and subsequently reacting said at least one hydrophilic block with an olefin monomer capable of free radical polymerization under polymerization conditions to form said at least one olefinic block, and modifying the surface tension of an olefinic substrate by an amount of at least 10 mN/m with the block copolymer.
2. (original) The method of claim 1, wherein said at least one hydrophilic block is prepared from vinyl acetate monomer.
3. (original) The method of claim 1, wherein said at least one hydrophilic block is prepared from an acrylic monomer.
4. (original) The method of claim 1, wherein said at least one olefinic block is prepared from ethylene.
5. (original) The method of claim 1, wherein said at least one olefinic block is prepared from butadiene.
6. (original) The method of claim 1, further comprising at least partially hydrogenating said olefinic block.
7. (original) The method of claim 1, wherein said block copolymer can cause a LDPE substrate to have a classification of at least 3B on the cross cut adhesion test when coated on the substrate.
8. (original) The method of claim 1, wherein said polymerization conditions during the polymerization of the olefinic block allow for control of the molecular weight of said olefinic block.

9. (original) The method of claim 1, wherein said polymerization conditions during the polymerization of the at least one hydrophilic block allow for control of the molecular weight of said hydrophilic block.

10. (canceled)

11. (canceled)

12. (previously presented) A method of preparing a block copolymer having at least one hydrophilic block and one olefinic block comprising polymerizing an olefinic monomer under free radical polymerization conditions in the presence of a dithio-containing control agent to create said at least one olefinic block and subsequently reacting said at least one olefinic block with a hydrophilic monomer capable of free radical polymerization under polymerization conditions to form said at least one hydrophilic block and modifying the surface tension of an olefinic substrate by an amount of at least 10 mN/m with the block copolymer.

13. (original) The method of claim 12, wherein said at least one hydrophilic block is prepared from an acrylic monomer.

14. (original) The method of claim 12, wherein said at least one hydrophilic block is prepared from vinyl acetate monomer.

15. (original) The method of claim 12, wherein said at least one olefinic block is prepared from butadiene.

16. (original) The method of claim 12, further comprising at least partially hydrogenating said olefinic block.

17. (previously presented) The method of claim 12, wherein said block copolymer can cause a LDPE substrate to have a classification of at least 3B on the cross cut adhesion test when coated on the substrate.

18. (original) The method of claim 12, wherein said polymerization conditions during the polymerization of the olefinic block allow for control of the molecular weight of said olefinic block.

19. (original) The method of claim 12, wherein said polymerization conditions during the polymerization of the at least one hydrophilic block allow for control of the molecular weight of said hydrophilic block.

20. (canceled) A block copolymer prepared by the method of claim 12.

21. (canceled) A block copolymer of polybutadiene and polyethyl acrylate prepared the method of claim 12.

22. (original) A method of preparing a block copolymer having at least one hydrophilic block and the structure A-R, wherein R represents a random block comprising at least two monomers, the method comprising polymerizing a hydrophilic monomer under free radical polymerization conditions in the presence of a dithio-containing control agent to create said at least one hydrophilic block and subsequently reacting said at least one hydrophilic block with at least one olefinic monomer and one monomer that is hydrophilic with respect to the olefinic monomer capable of free radical polymerization under polymerization conditions to form said at least one random block, and at least partially hydrogenating said random block.

23. (previously presented) The method of any of claims 1, 12 or 22, wherein the hydrophilic monomer is polyethyl acrylate and the olefin monomer is polybutadiene.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.